

the newsletter of
SINCLAIR COMPUTER
USERS SOCIETY
S I N C U S since
1982

JAN/FEB 89

1229 RHODES ROAD
JOHNSON CITY NEW YORK 13790

VOL 7: NO 2

HAPPY NEW YEAR <1989>!

November and December meets at the Vestal Library were lightly attended, and those present enjoyed the coffee, and plenty of cookies at the Dec. meet. Local members, we need your presence at the meets, your input or your questions. This newsletter still needs input, and ideas. Its your society, you pay dues, but I and one or two others cannot generate all the ideas for the meets and the newsletter.

In the interests of SAVEing Money, I use mailing labels for the newsletter that may not reflect the subscriber's current subscription status. Invariably, as soon as I make up a batch of labels, an address change comes along. So, I use a master file printout with current data to determine the mailings.

Max-Dos -does live! Bill Jones loaned me his Oliger V2.4 Eprom, to see if the Eprom was the cause of the problem, and I also added disable switches to both boards. I had to switch one board on, the other off. Then I missed a switch throw and the software did it. I was into Max-Dos without realizing it. I put back the V2.52 Eprom, and eventually it too began to work as Max-Dos. It is rather strange, as immediately after firing up the setup, I have to throw a switch or two, and then after a bit, software alone does the switching. I am able to transfer screens and MScript files from SAFE to LKDOS with no problem. But BASIC, and printer codes are giving me a hangup. I can say it does work, but more on its own terms than mine. Knowing what I do now know, I wouldn't recommend running out and buying this MAX-dos from startup, but maybe as an add on. Neither Larry Kenny nor John Oliger has access to the others system, but both have been willing to help me out with problems. In the interests of keeping sanity, stay tuned to Bill Jone's Update magazine.

With sadness I have to relate the following: I picked up on CompuServe and verified with Ray Payne by phone (12-27-88); Knighted Computers is selling out it's TS stock to WMJ and will serve its customers as always until the deal is complete. Less than a year ago, another UG reported in it's newsletter that Knighted was dropping the TS line, and according to Ray Payne the thought hadn't crossed his mind. Well the report may have hastened the inevitable, so one should be most careful about reporting the closing of a business.

From SMUG BYTES, PO BOX 101, Butler, WI 53007, Quantam Computing is filing for bankruptcy Feb. 6, 1989. If you have a claim against the owner, Mr. Tomei, Jr. contact Jonathan Kohn, 1180 Raymond Blvd., Newark, NJ 07102-4107.

NOTES on MScript V5.3- to use the header or footer printer to start printing on page one, make sure the command lines are NOT preceded by spaces or blank lines. To force it to start on page two, place at least one blank line before the line with the page number "PN" info on it; ">LL=80,PN=6,LM=9,etc"

MEET NOTES
Society meetings to be held on the THIRD Wednesday of Each month- Vestal Library 7pm ! Bring a friend or relative- coffee- Remember them nasty snow emergencies- if there is one then don't risk it, stay home, stay safe and we'll meet again!!

MEET NOTES

To get new ideas on how to find more NEW hardware and NEW software read PixelPrintPress-Editor Bill Ferree has dropped an idea on the British that they ought to sell in the USA, and he wants you and you to write him, them and tell them all you are interested in BUYING NEW stuff! WRITE Bill at Mountaineer Software, 749 Hill Street #6, Parkersburg, WV 26104.

That's right write! **N E W S T U F F ! !**

For another outfit that is promoting NEW stuff for the TS community, write to RMG, 1419 1/2 7th Street, Oregon City, OR 97045 (503)655-7484. Rod Gowen, owner is ALWAYS promoting NEW stuff for ALL the TS machines, and from my past experience he gives GREAT service. (An unsolicited ad)!

So, Happy New Year 1989, really it has been a long run, longer than I figured possible. Many diehards are getting the old machines to really humm now. Keyboards, add-on memory, disk drives, 256K RAM, plug-in RAM, bank-switching, RGB color, voice, 1200 baud modems, spectrum ROMs, plotters, printers, and software that is really useful. QL goodies are cropping up all the time, but theys aint cheap. We are now down to the nitty-gritty hardcore, the never say die TS users. This May, a TS Computer Fair is planned in the Baltimore area. I am planning on going. Anyone else??

CATS CAPITALFEST INVITATION

The Capital Area Timex/ Sinclair (CATS) User Group is hosting a computer fest May 6-7 1989, at the Howard Johnson Inn, Route 450 and the (Baltimore)Beltway (eastside), New Carrollton, MD. A banquet is being held on Friday May 5. For more details on where to stay, how much and how to get there contact the group at: CATS Capitalfest -POB 24- Garrett Park, Maryland 20896-0024, tele:(301)439-8756

Have you lugged home a copy of Computer Shopper lately? The TS column in it is a little strange, but the rest is worth the money.

Programming tip: The following can be adapted to any language or program. In the code the input statement asks for a T or M, and the variable S has its value determined by your selection. Notes in (the brackets) !

```
100 INPUT "Enter <T>asword or <M>script";I$      ( I$ holds the selection )
105 LET S = (33280 AND T$ = "T") + (49670 AND T$ = "M")  ( S holds the new value )
110 PRINT S      ( if T was picked 33280 would be printed, and if M were picked then 49670 would print out )
```

NOTE: The VALUES must be BEFORE the AND or the value of S will be 1. You are of course NOT limited to this exact manner, but it can get you away from using IF THEN conditional statements, and still you have the ability to change values or even GOTO/GOSUB values with alphabetical input instead of entering numerical values.

Timex/Sinclair SIG of the D.E.C. BBS -run by the Pixel Print Press----
(614)423-7875 Open 24 hours- 300/1200 baud- 7/1/E or 8/1/N There is a collection of TS PD Software you can download. A message base area is available.

Compuserve- 29 Dec 88- NO TS club section, what happen? Jan 1, it was back on! What gives, a glitch in the system or are they trying to tell us something?? Around here the use of BBSs has dropped off. Same number of BBSs, fewer users. Hey dustoff the modem and get on, say hi. See you on the BBSs-

COLOR COPY for your TS2068?? Impossible!?! Send a Large SASE to John McMichael, 1710 Plamer Dr., Laramie, WY 82070 for info on connecting a OKIMATE 20 printer I/F and details on available software, and get some color in your print!

Paul's Page On Pascal

In the last issue, in this column, I related some of the trivial aspects of programming. At the time I wrote that I had little "hands-on" feel for Pascal, and wrote what I felt was the absurd importance given the trivia of programming. Now after finishing the course, and still quite the novice in Pascal, I beg to differ with the concept of teaching a computer language.

In a complex subject such as a language, whether oral or computer, the individual has to master the physical aspects first. A baby learns to control mouth and tongue to vary the sounds coming out of his mouth. After 5 or six years, society begins a formal training of the "language" after the child can speak. A computer language is on two levels, one the physical and/or syntax, also one might include the basic computer keyboard and DOS as mastery subjects before one really begins the learning of the language. Then there is the programming aspect where the use of logic manipulates data to provide a useful tool for the computer user.

The teaching environment is inhibited by teaching a hybrid subject that can be used on a MAIN FRAME or a PC. For less confusion, one or the other, but both tends to complicate matters. For the initial stages of instruction why not computer aided instruction? Are there no college level computer aided instruction software available?

The emphasis is on the pre-planning stage; outlining, charting, walking thru and testing, BEFORE the program is encoded. While a great amount of time is saved in the long run with the pre-planning, the course did not teach all the mechanics of Pascal first, and one was quite limited to what had been taught. If looping had not been covered, looping could not be used in the assignment. So, much effort was spent on doing without a function you may know of, and hammering together a program to run to teacher's specs. While the language maybe structured, the lessons and assignments seemed random in relation to each other.

The problem is one of putting the cart before the horse or after. How can you do pre-planning until you are aware of the tools available to you in programming? How could you speak a word until you had heard one? How could you use conditional statements to solve a problem if you never read of one?

Pascal is often called a "great teaching language". So would Basic. There are a few concepts in Pascal that are NOT a great breeze to learn. And Variables, VAR and the passing of such between modules(sub-routines) is a mental block for me. The teaching of the subject on a blackboard, then 24 or 48 hours later, use that material, just never gelled for me. The VAX system is not the greatest to LEARN on. If you make a single error early in the PASCAL program, the compiler picks it up and rolls it thru the whole program and you end up with 40 or 50 error statements in your syntax. And to read such, the statements scroll outa sight on the VAX screen.

With the TS computer in your home, and a manual at your side, you could learn basic BASIC. ENTER a few programs from magazines, and you learn how to debug. Of course you need the drive to push your self to do so. But what you don't learn is STRUCTURED programming. The gurus feel this is the cat's meow, the sliced bread of computing. You design your code(written program) so that you have a MAIN module and it may initialize your variables, and do NOTHING but call sub routines or procedures/functions as necessary. GOTOs are available, but they weren't taught, and wash your mouth if mentioned. A very liberal sprinkling of remarks to aid your self at later dates of what the particular module does, and what each variable is for. Spelling out variables aids in the flow of reading the program. By writing the program out in ENGLISH, in simple statements, you also make it easy to transfer to another language or computer.

I am not going to attempt to teach PASCAL here, I will as space permits go into the problem solving aspects and how charting and pre-planning can be of help to even the BASIC user. If my order of HiSoft's Pascal ever gets here, maybe I will discuss that.

EXPLORING THE TIMEX/SINCLAIR 1000'S
SINCLAIR LOGIC CHIP

(SCL)

PART 2

by

Don Lamén, SINCUS

6-29-88

Simulation Circuits and Timing Charts
of the SCL Chip

Being unable to draw the exact circuits; because of the lack of any technical data on the Ferranti Mask Programmable Universal Logic Chip ULA2C184E (either programmed or unprogrammed); using standard TTL chips I have made the following drawings simulating the functions that the ROM routines indicate.

ULA2C184E Pin-out Chart
1C-1
SCL CHIP

1	A7' --->	40	+5V
2	A8' --->	39	A6' ---->
3	A2' --->	38	A5' ---->
4	A1' --->	37	A4' ---->
5	A0' ---->	36	A3' ---->
6	RD <---	35	CLOCK
7	IDRQ <---	34	GND
8	WR <---	33	KBD0 <---
9	MREQ <---	32	D0 <---->
10	M1 <---	31	KBD1 <---
11	A14 <---	30	D1 <---->
12	RAMC.S. ---->	29	KBD2 <---
13	ROMC.S. ---->	28	D2 <---->
14	CLOCK' ---->	27	KBD3 <---
15	NMI ---->	26	D3 <---->
16	TV/TAPE ---->	25	KBD4 <---
17	HALT <---	24	D4 <---->
18	A15 <---	23	D5 <---->
19	D7 <---->	22	USA/UK <---GRD FOR USA
20	TAPE IN <---	21	D6 <---->

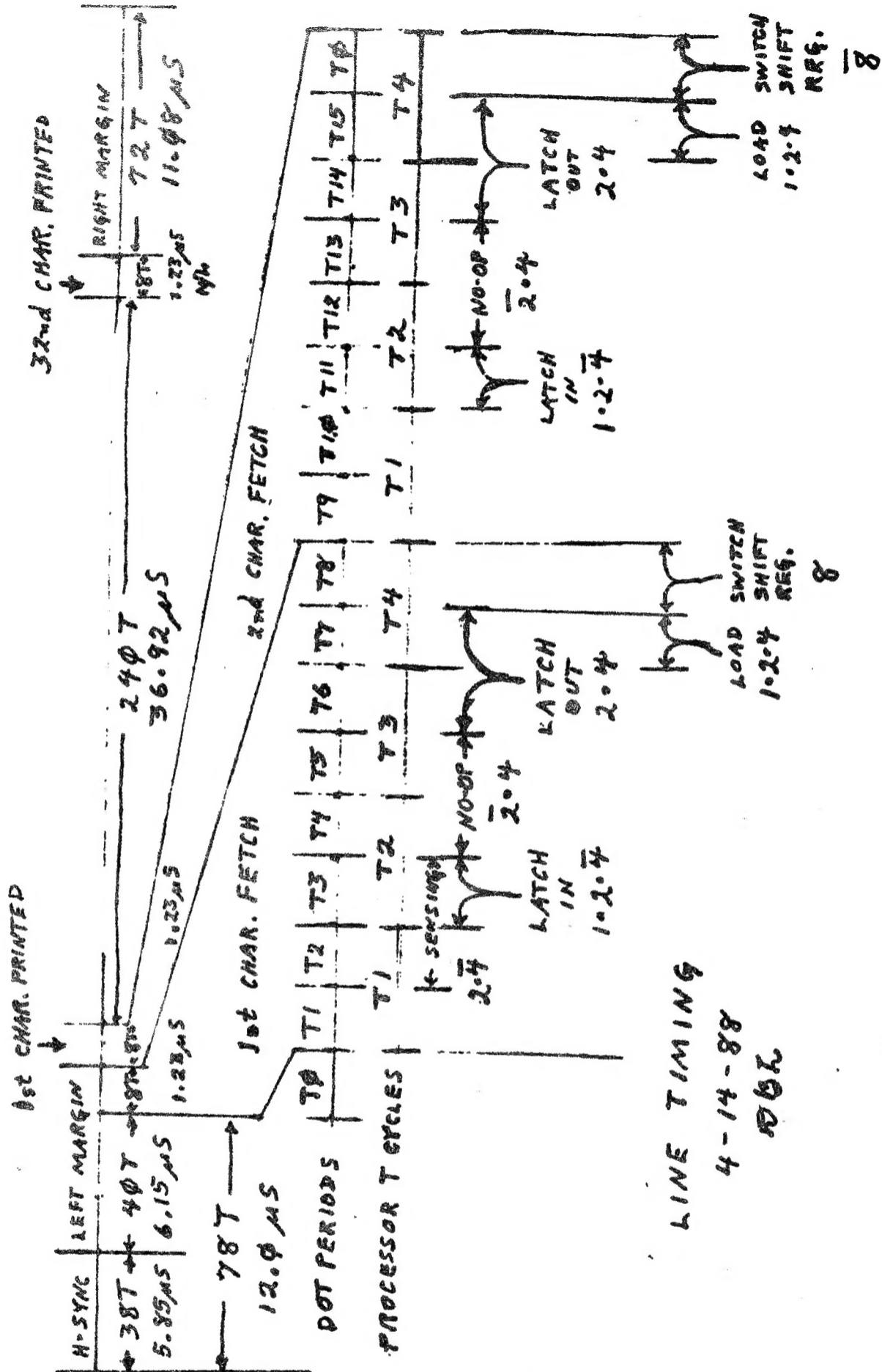
fclock = 6.5 MHz

fclock' = 3.25 MHz

Editor's note: Due the amount of drawings, several will be included in the Mar/Apr 89 issue of SINCUS NEWS, with the rest of Don's notes.

In the above artwork- there are lines over RD, WR, MREQ, RAMC.S., ROMC.S., HALT, NMI, and M1.

ONE SCAN LINE 414T 63.69 μ Sec.



LINE TIMING

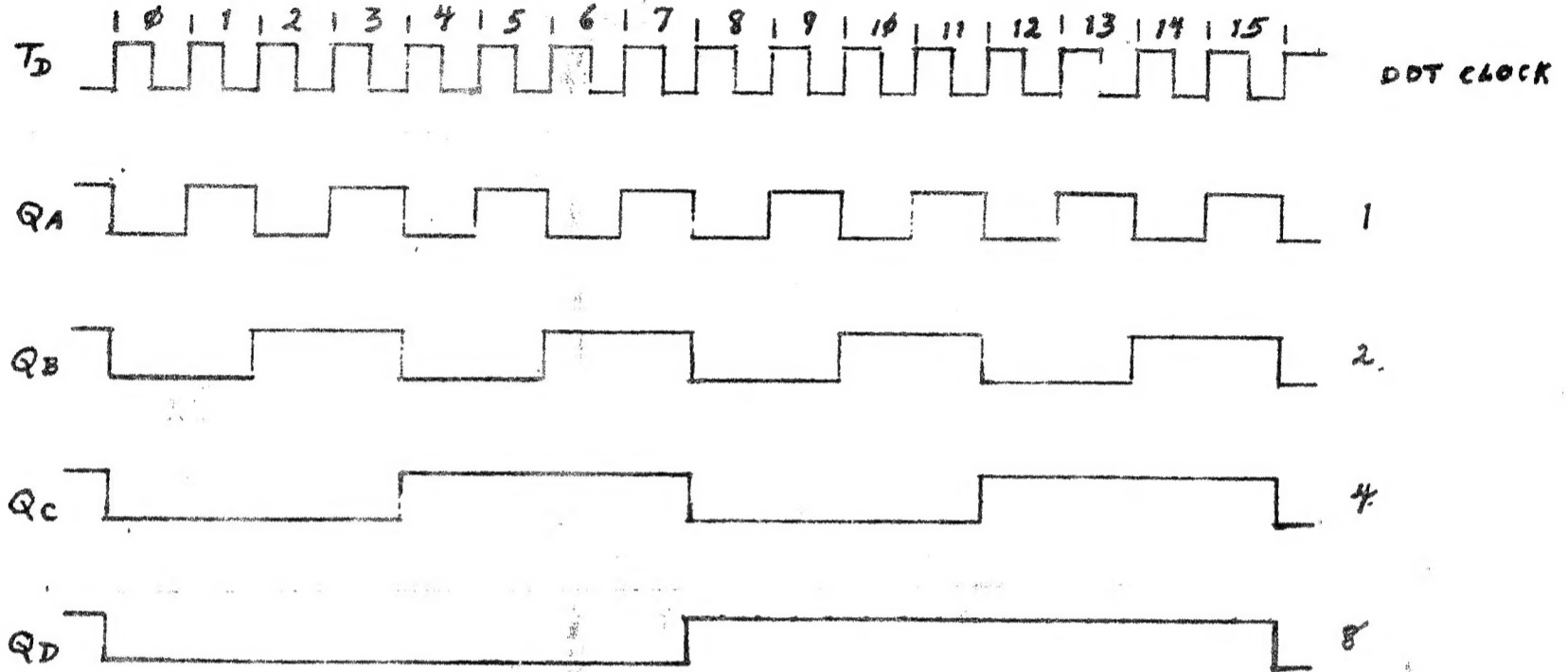
4-14-88
DOL

ONE SCAN LINE 414T 63.69 μ Sec.

Refer to Part I, page 5 (Nov/Dec 88 SINCUS NEWS)
"Prime Clue in Timing"

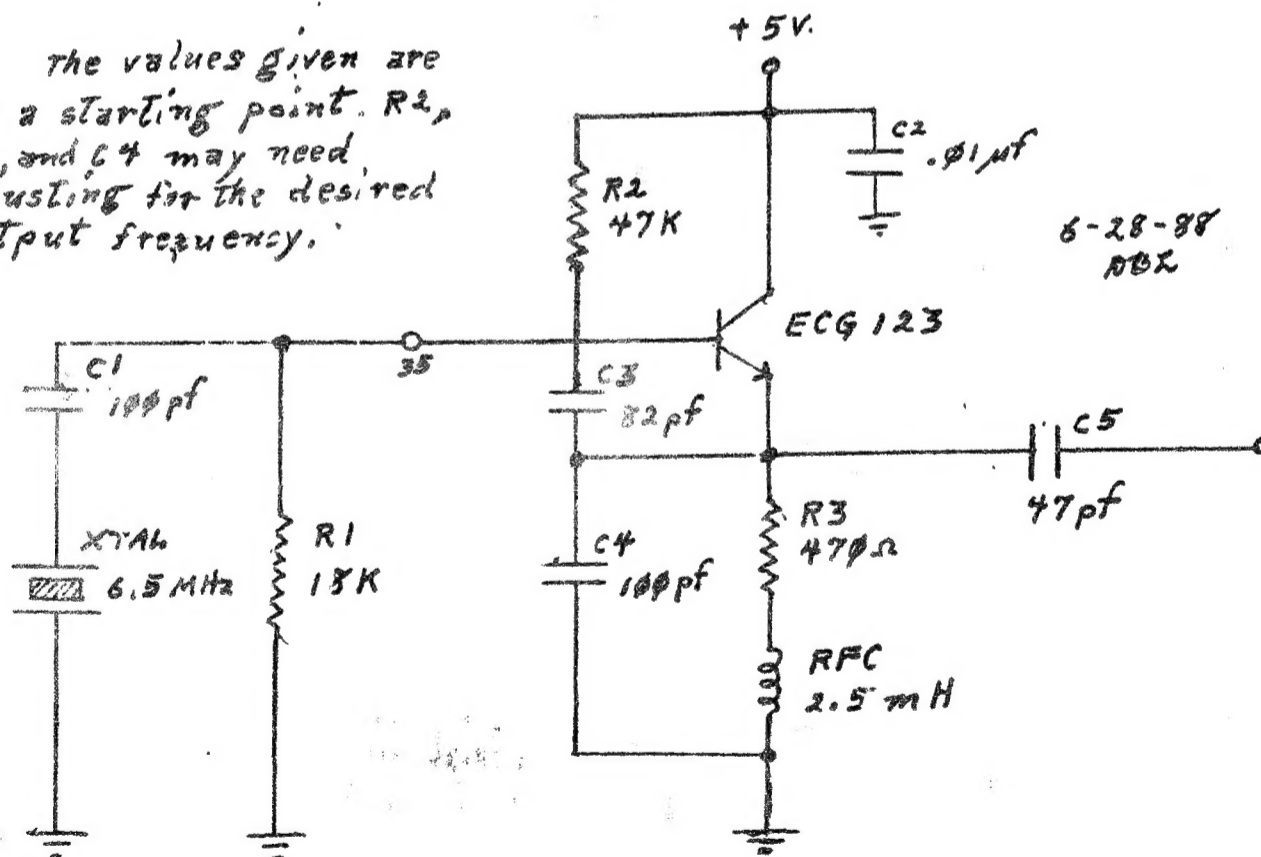
U3 TIMING

4-18-88
RBL



U3 TIMING

NOTE: The values given are for a starting point. R2, C3, and C4 may need adjusting for the desired output frequency.



6-28-88
RBL

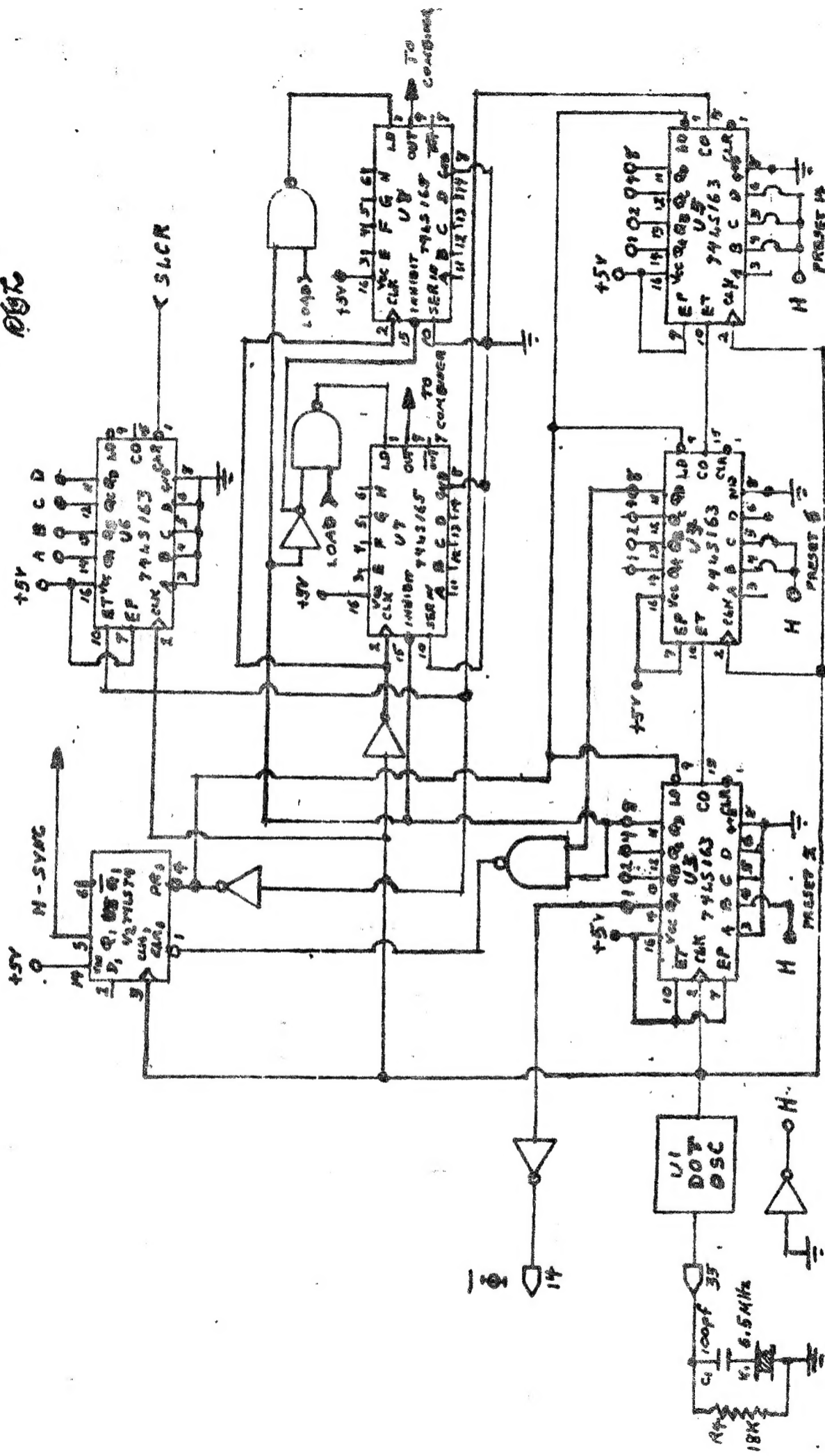
SIMULATION OF THE DOT OSCILLATOR

Refer to Part I, page 5-6 (Nov/Dec 88 SINCUS NEWS)
"Dot Oscillator"

SIMULATION OF TIMING CHAIN

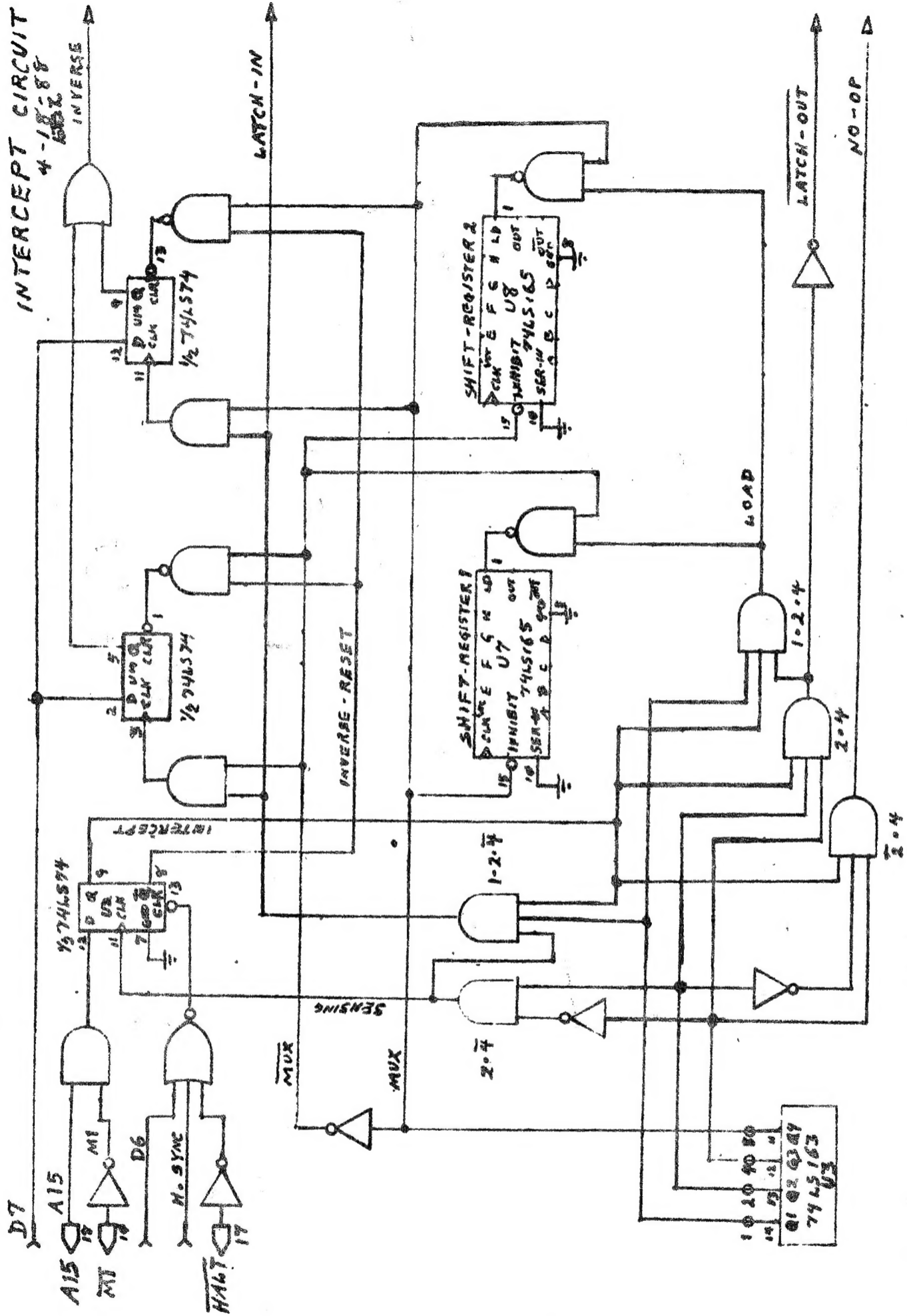
4-14-88

DBZ



SIMULATION OF TIMING CHAIN

Refer to Part I, page 6 (Nov/Dec 88 SINCUS NEWS)
"Internal Timing Chain"



INTERCEPT CIRCUIT

Refer to Part I, page 7-8 (Nov/Dec 88 SINCUS NEWS)

PARAMETERS

Dot Clock Frequency: 6.5 MHz + or - 200 Hz
 Processor Clock Frequency: 3.25 MHz + or - 100 Hz
 Dot Period (Td): 0.1538451 uSec. + or - 4.7 pSec.
 Processor Clock Period (Tp): 0.3076923 uSec. + or - 9.4 pSec.
 Horizontal Sync Pulse: 19 Tp = 5.85 uSec.
 Horizontal Scan Line: 207 Tp = 63.69 uSec.
 Frame Sync Pulse: 1212 Tp = 372.92 uSec.
 One Frame: 54234 Tp = 16687.384 uSec.
 1/60 Sec. = 16666.6 uSec.

Therefore: The Frame Time is 0.12 % Slow, well within the allowable 2 %.

Normal Horizontal TV Scan = 63.4 uSec.

Therefore: The Horizontal Scan Time of the T/S 1000 (63.69 uSec.) is 0.46 % Slow, also well within the allowable 2 %.

NOTE: After the first Frame, each Frame equals exactly 262 ScanLines.

INTERRUPT TIMING

NMI:

1. If NOT NMI is Low and NOT HALT is Low the Instruction Execution Time 11 Tp (The same as a normal RST instruction).
2. If NOT NMI is Low and NOT HALT is High the Wait circuit built around transistor TR-1 pulls the NOT WAIT Pin of the Z-80 Low. The M1 cycle of the NMI instruction does not poll the NOT WAIT Pin. Therefore the NOT WAIT signal is not detected until T2 of M2, a WRITE cycle, which is the 7th T cycle of the instruction. This leaves 5 T cycles to be completed after the NOT NMI Pin goes High. Therefore, the execution time of this instruction is equal to the Horizontal Sync + 5 Tp (24 Tp).

INT:

1. In Interrupt Mode 0 the execution time is 2 Tp more than the normal execution time for the instruction being entered by the peripheral. This is because there are two built in wait states in this interrupt.
2. In Interrupt Mode 1 the execution time is 13 Tp, two more than a normal RST instruction because of the two built in wait states.
3. In Interrupt Mode 2 the execution time is 19 Tp. 4. The Maskable Interrupt polls the NOT WAIT line on the 2nd built in WAIT T cycle of M1. If the NOT WAIT line is pulled Low late it can also be detected during T2 of either M2 or M3.

NOTE:

1. Both NMI and INT have a T1, T2, T3, T4 & T5 in M1 and T1, T2 & T3 in both M2 & M3.
2. In INT the built in wait states are between T2 & T3 of M1.

Part 3 will conclude this series on the TS1000 SCL Chip in the Mar/Apr 89 issue.

-SINCLAIR Computer Users Society-

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SINCUS will leave messages on OPA BBS-(607)754-3420 or 687-4346

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Hello and welcome to NEW member A. Piombino, Lawtey, FL; Charles Reise, Muskegon, MI; and a Welcome back to returning/RENEWING member, William MacDougall, Willowdale, ONT.

Thanks to Don Lamem, for their help with this issue. Stay healthy!

EXCHANGE DISKS offered by SINCUS

The titles for 4 discs are available for sending a SASE. Swaps are currently available on the Oliger system. We only are able to offer 5.25" discs, double sided, 40 tracks, double density. The discs contain a compilation of programs from SINCUS members, exchanges, and from other User Groups, Comuserve, and other bulletin boards. Each disc is offered by SINCUS at cost for \$2.50 each (PP). Please indicate which disc(s). Send check or money order to; John Colonna, SINCUS, 28 Guilfoyle Ave., Binghamton, NY 13903.

The previous offer for Larken disc copies of this material is being withdrawn until we get the Larken cartridge to work along side the Oliger B board.

In addition to the above EXCHANGE Discs, SINCUS also offers:
CLONE a two mode, 2068 tape program copier \$5.00 (tape header reader included)
SINCUS NEWS-\$8 per year for six issues.
Computus Interruptus Series (PRINT)\$15 PP.
Computus Interruptus Series (DISC) in Oliger Disc format.

For information on any of the above please send a SASE, and we will be glad to help. Write: Paul Hill, SINCUS, 1229 Rhodes Rd. Johnson City, NY 13790.